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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>26 October 2007</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,11-13,20-25,30-38,43-51 and 56-58* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,11-13,20-25,30-38,43-51,56-58* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Objections

1.   Claims 1-6,11-13,20-25,30-38,43-51,56-58 are objected to because of the following

informalities:

Claim 1 recites "determining" in line 10. For clarification with "determining" recited in

line 11, it is suggested to change "determining" in line 12, to "second determining" or "another

determining" or equivalent thereof. *This will clarify "the determining" recited in line 12 since*

"the determining" in line 12 only refers to "determining" recited in line 11.

Claims 20, 33 and 46 are also objected for the same reason as set forth above in claim 1.

Claims 2-6,11-13,21-25,30-32,34-38,43-45,47-51,56-58 are also objected since they are

depended upon objected claims 1,20,33, and 46 as set forth above.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making
> and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it
> pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode
> contemplated by the inventor of carrying out his invention.

3.   Claims 1-6,11-13,20-25,30-38,43-51,56-58 are rejected under 35 U.S.C. 112, first

paragraph, as failing to comply with the written description requirement. The claim(s) contains

subject matter which was not described in the specification in such a way as to reasonably

convey to one skilled in the relevant art that the inventor(s), at the time the application was filed,

had possession of the claimed invention.

Amended claim 1 recites, "**a plurality of state probabilities**" and "**a plurality of marginal packet loss probabilities**", and "determining selecting one of the one or more amounts of bandwidth **using the plurality of state probabilities and the plurality of marginal packet loss probabilities**" in lines 8-14.

Claims 11 and 13 recite, "determining said amount is based on **a probability that a specified number of uses are using said link when a specified maximum call blocking probability is satisfied relative to said link**".

Claims 12 and 13 recite, "**a probability that a packet will be lost when said packet is sent through said link**".

The specification <u>fail</u> to support "**a plurality of state probabilities**" and "**a plurality of marginal packet loss probabilities**", and "determining selecting one of the one or more amounts of bandwidth **using the plurality of state probabilities and the plurality of marginal packet loss probabilities**" in lines 8-14.

The specification page 12, recites, "**<u>Pi is the probability that i users are currently and actively using the communication link if the specified maximum call blocking probability is satisfied</u>. Each Pi may be referred to as "state probability"**". If the applicant asserts that "state probability" recited amended claim 1 is supported by the specification as Pi, <u>then the specification fail</u> to support "**<u>a probability</u> that a specified number of uses are using said link when a specified maximum call blocking probability is satisfied relative to said link**" recited in claim 11 and 13. Thus, amended claim 1 recites "State Probability" as <u>another separate probability</u> yet the specification discloses only "one" probability (i.e. Pi). In other word, the

specification supports only "one" probability that related to "state probability", not "two"

probabilities as recited in the claims 1, 11 and 13.

The specification page 12, recites, "**Ei (S') is the probability that a given data packet**

will be lost when i users are using a communication link having capacity S'. Each Ei(S')

may be referred to as a "marginal packet loss probability"". If the applicant asserts that

"marginal probability" supported by the specification as Ei(S'), then the specification fail to

support "**a probability that a packet will be lost when said packet is sent through said link**"

recited in claim 12 and 13. Thus, amended claim 1 recites "marginal packet loss Probability" as

another separate probability yet the specification discloses only "one" probability (i.e. Ei(S')). In

other word, the specification supports only "one" probability that related to "marginal packet loss

probability", not "two" probabilities as recited in the claims 1, 12 and 13.

Amend claim 20, 33 and 46 are also rejected for the same reason as set forth above in

claim 1.

Claims 2-6,11-13,21-25,30-32,34-38,43-45,47-51,56-58 are also rejected since they are

depended upon rejected claims 1,20,33, and 46 as set forth above.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

5.   Claims 1,12,20,31,33,44,46 and 57 and are rejected under 35 U.S.C. 103(a) as being

unpatentable over Soumiya US005583857A) in view of Fodor (US006788646B1), and further in

view of Beshai (IEEE journal).

Regarding Claim 1, Soumiya discloses a method of determining an amount of

bandwidth needed on a link (see FIG. 1, 18, ATM network system processing the methods/steps

of bandwidth calculating for a line/link 22, also see FIG. 19-20; see col. 9, line 5-15; see col. 16,

line 46-54; see col. 16, line 64-69), the method comprising:

receiving a quality of service (QoS) factor (see col. 10, line 30-60; obtaining/receiving

QoS),

determining (see FIG. 1, determining/calculating by required bandwidth calculator 13),

for each of one or more amounts of bandwidth, based on the QoS factor (see col. 10, line 30-60;

calculating bandwidth according to QoS), wherein said determining is performed based on user

behavior (see FIG. 1, according to difference of average cell rate Ra and peak cell rate Rp which

is declared by the user (i.e. user behavior/activities/act relative to the line/connection) from the

cell rate comparator 11) and traffic characteristics see FIG. 1, and traffic class from traffic class

judging portion 12);

determining (see FIG. 1, determining/calculating by required bandwidth calculator 13),

based on user behavior (see FIG. 1, according to difference of average cell rate Ra and peak cell

rate Rp which is declared by the user (i.e. user behavior/activities/act relative to the

line/connection) from the cell rate comparator 11) and traffic characteristics (see FIG. 1, and

traffic class from traffic class judging portion 12), said amount (see FIG. 1,

calculated/determined bandwidth); see col. 9, line 6-26; and

wherein the determining comprises selecting one of the one or more amounts of

bandwidth (see FIG. 1, selecting/determining bandwidth; see col. 9, line 6-26); and

storing said amount in memory (see FIG. 1, storing calculated bandwidth in the estimated

bandwidth storage portion 15; see col. 9, line 25-30; also see FIG. 18, storing bandwidth in

memory 25; see col. 16, line 55-63).

Soumiya does not explicitly disclose "a grade of service (GoS) factor, wherein the GoS

factor specifies a maximum call blocking probability for said link and a plurality of state

probabilities based on the GoS factor, and using the plurality of state probabilities".

However, utilizing a grade of service (GoS) factor, wherein the GoS factor specifies a

maximum call blocking probability for said link and a plurality of state probabilities based on the

GoS factor, and using the plurality of state probabilities is so well known and established in the

art as indicated by well-known Erlang Formula and well-known Fluid-Flow analysis (as admitted

by the applicant in page 12 of specification), and also evidence by Fodor.

In particular, Fodor teaches receiving a grade of service (GoS) factor (see col. 3, line 10-

15; see col. 10, line 1-7; receiving/obtaining grade of service (GOS) factor/ parameter), wherein

the GoS factor specifies a maximum call blocking probability for said link (see col. 3, line 25-33;

see col. 10, line 8-38; GOS predetermines/specifies call blocking probability, B^{max}, for the

link/line) and determining, for each of one or more amounts of bandwidth, a plurality of state

probabilities based on the GoS factor (see col. 10, line 1-6, 33 to col. 11, line 9; see col. 13, line

5 to col. 15, line 67; system/steady state probability according to Erlang Formula while

meeting/satisfying GOS call blocking requirement);

determining comprises selection one of the one or more amounts of bandwidth using the probability of state probabilities (see col. 3, line 10-15,34-45,60 to col. 4, line 2; col. 10, line 1-6, 33 to col. 11, line 9; see col. 13, line 5 to col. 15, line 67; selecting/determining bandwidth according to system/steady state probability).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide, "a grade of service (GoS) factor, wherein the GoS factor specifies a maximum call blocking probability for said link and a plurality of state probabilities based on the GoS factor, and using the plurality of state probabilities", as taught by Fodor in the system of Soumiya, so that it would enable/ensure that the call GOS level is guaranteed for traffic on the link; see Fodor col. 3, line 10-16; so that it would benefit to develop and utilize a link capacity/bandwidth for optimization; see Fodor col. 2, line 48-50.

Neither Soumiya nor Fodor explicitly discloses "QoS factor specifies a maximum packet loss probability for said link, and the plurality of marginal packet loss probabilities based on QoS factor, the determining comprises selecting one of the one or more using the plurality of marginal packet loss probabilities".

However, utilizing QoS factor specifies a maximum packet loss probability for said link, and the plurality of marginal packet loss probabilities based on QoS factor, the determining comprises selecting one of the one or more using the plurality of marginal packet loss probabilities so well known in art as evident by Beshai. In particular, Beshai discloses QoS factor specifies a maximum packet loss probability for said link (see section II, section III B-C, IV, V, Appendix. II, QoS specifics/identifies the overall/aggregate/maximum cell loss probability), and the plurality of marginal packet loss probabilities based on QoS factor (see

section II; section III B-C, IV, V, Appendix. II, marginal/original probability of packet lost is·

determined based on QoS), and the determining comprises selecting one of the one or more

amounts of bandwidth using the plurality of state probabilities (see section III C, V, Appendix I,

II, determining/selecting capacity/load using state probabilities according to Erlang Formula) and

the plurality of marginal packet loss probabilities (see section II, section III B-C, IV, V,

Appendix. II; see section II; section III B-C, IV, V, Appendix. II, and marginal/original

probability of packet lost).

Therefore, it would have been obvious to one having ordinary skill in the art at the time

the invention was made to provide "QoS factor specifies a maximum packet loss probability for

said link, and the plurality of marginal packet loss probabilities based on QoS factor, the

determining comprises selecting one of the one or more using the plurality of marginal packet

loss probabilities" as taught by Beshai, in the combined system of Soumiya and Fodor, so that it

would provide low cost and high performance as suggested by Beshai; see Beshai section I.

Regarding Claim 12, Soumiya discloses determining bandwidth based when packet is

send through said link (see FIG. 18, 27, a cell is send through link/line; see col. 16, line 46-64;

see col. 1, line 50-66) that has a specified amount of bandwidth (see FIG. 2, a link/line has a

bandwidth; see col. 3667) and is being used by a specified number of users (see FIG. 18, 27, and

utilize by a number of users/subscribers, where each user/subscriber (see FIG. 18), using the

link/line, is associated with each call; see col. 7, line 11-16; see col. 7, line 50-60; see col. 9, line

21-40; see col. 10, line 31-40).

Neither Soumiya nor Fodor explicitly disclose "based on a probability that a packet will

be lost".

However, determining bandwidth based upon a probability of packet lost is so well known in the art. In particular, Beshai discloses determining based on a probability that a packet will be lost when said packet is send through a link that: has a specific amount of bandwidth; (see section II, section III B-C, IV, V, Appendix. II; determining link-capacity/bandwidth according to marginal/original probability of cell lost probability for a cell that will be lost when traverses over the link, and has a predefined recourses/capacity and used by users of the network).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide ""based on a probability that a packet will be lost" as taught by Beshai, in the combined system of Soumiya and Fodor, so that it would provide low cost and high performance as suggested by Beshai; see Beshai section I.

Regarding Claim 20, Soumiya discloses a computer-readable storage medium carrying one or more sequences of instructions (see FIG. 18, memory 25) for determining an amount of bandwidth needed on a link (see FIG. 1, 18, for calculating bandwidth for a line/link 22, also see FIG. 19-20; see col. 9, line 5-15; see col. 16, line 46-54), which instructions, when executed by one or more processors (see FIG. 18, processed/executed by a combined controlling system of controller 23 and admission controller 24), cause the one or more processors to carry out the steps of (see FIG. 1, 18, causing the combined controlling system to process the methods/steps for ATM network system, also see FIG. 19-20; see col. 9, line 5-15; see col. 16, line 64-69) as set forth above in claim 1. Thus, claim 20 is also subjected to the same rejection as set forth above in claim 1.

Regarding Claim 31 Soumiya discloses determining bandwidth based when packet is

send through (see FIG. 18, 27, a cell is send through link/line; see col. 16, line 46-64; see col. 1,

line 50-66) that has a specified amount of bandwidth (see FIG. 2, a link/line has a bandwidth; see

col. 3667) and is being used by a specified number of users (see FIG. 18, 27, and utilize by a

number of users/subscribers, where each user/subscriber (see FIG. 18), using the link/line, is

associated with each call; see col. 7, line 11-16; see col. 7, line 50-60; see col. 9, line 21-40; see

col. 10, line 31-40).

Neither Soumiya nor Fodor explicitly disclose "based on a probability that a packet will

be lost".

However, determining bandwidth based upon a probability of packet lost is so well

known in the art. In particular, Beshai discloses determining based on a probability that a packet

will be lost when said packet is send through a link that: has a specific amount of bandwidth;

(see section II, section III B-C, IV, V, Appendix. II; determining link-capacity/bandwidth

according to marginal/original probability of cell lost probability for a cell that will be lost when

traverses over the link, and has a predefined recourses/capacity and used by users of the

network).

Therefore, it would have been obvious to one having ordinary skill in the art at the time

the invention was made to provide "based on a probability that a packet will be lost" as taught by

Beshai, in the combined system of Soumiya and Fodor, so that it would provide low cost and

high performance as suggested by Beshai; see Beshai section I.

Regarding Claim 33, Soumiya discloses an apparatus for determining an amount of

bandwidth needed on a link (see FIG. 1, 18, ATM network system processing for bandwidth

calculating for a line/link 22, see col. 9, line 5-15; see col. 16, line 46-54; see col. 16, line 64-69),

comprising:

means for receiving (see FIG. 1, receiving/input side/means) a quality of service (QoS)

factor (see col. 10, line 30-60; obtaining/receiving QoS),

means for determining (see FIG. 1, required bandwidth calculator 13

calculates/determines), for each of one or more amounts of bandwidth, based on the QoS factor

(see col. 10, line 30-60; calculating bandwidth according to QoS), wherein said determining is

performed based on user behavior (see FIG. 1, according to difference of average cell rate Ra

and peak cell rate Rp which is declared by the user (i.e. user behavior/activities/act relative to the

line/connection) from the cell rate comparator 11) and traffic characteristics see FIG. 1, and

traffic class from traffic class judging portion 12);

means for determining (see FIG. 1, required bandwidth calculator 13

calculates/determines), based on user behavior (see FIG. 1, according to difference of average

cell rate Ra and peak cell rate Rp which is declared by the user (i.e. user behavior/activities/act

relative to the line/connection) from the cell rate comparator 11) and traffic characteristics (see

FIG. 1, and traffic class from traffic class judging portion 12), said amount (see FIG. 1,

calculated/determined bandwidth); see col. 9, line 6-26; and

wherein the determining comprises selecting one of the one or more amounts of

bandwidth (see FIG. 1, selecting/determining bandwidth; see col. 9, line 6-26); and

means for storing said amount in memory (see FIG. 1, storing calculated bandwidth in the

estimated bandwidth storage portion 15; see col. 9, line 25-30; also see FIG. 18, storing

bandwidth in memory 25; see col. 16, line 55-63).

Soumiya does not explicitly disclose "a grade of service (GoS) factor, wherein the GoS factor specifies a maximum call blocking probability for said link and a plurality of state probabilities based on the GoS factor, and using the plurality of state probabilities".

However, utilizing a grade of service (GoS) factor, wherein the GoS factor specifies a maximum call blocking probability for said link and a plurality of state probabilities based on the GoS factor, and using the plurality of state probabilities is so well known and established in the art as indicated by well-known Erlang Formula and well-known Fluid-Flow analysis (as admitted by the applicant in page 12 of specification), and also evidence by Fodor.

In particular, Fodor teaches receiving a grade of service (GoS) factor (see col. 3, line 10-15; see col. 10, line 1-7; receiving/obtaining grade of service (GOS) factor/ parameter), wherein the GoS factor specifies a maximum call blocking probability for said link (see col. 3, line 25-33; see col. 10, line 8-38; GOS predetermines/specifies call blocking probability, B^{max}, for the link/line) and determining, for each of one or more amounts of bandwidth, a plurality of state probabilities based on the GoS factor (see col. 10, line 1-6, 33 to col. 11, line 9; see col. 13, line 5 to col. 15, line 67; system/steady state probability according to Erlang Formula while meeting/satisfying GOS call blocking requirement);

determining comprises selection one of the one or more amounts of bandwidth using the probability of state probabilities (see col. 3, line 10-15,34-45,60 to col. 4, line 2; col. 10, line 1-6, 33 to col. 11, line 9; see col. 13, line 5 to col. 15, line 67; selecting/determining bandwidth according to system/steady state probability).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide, "a grade of service (GoS) factor, wherein the GoS factor

specifies a maximum call blocking probability for said link and a plurality of state probabilities based on the GoS factor, and using the plurality of state probabilities", as taught by Fodor in the system of Soumiya, so that it would enable/ensure that the call GOS level is guaranteed for traffic on the link; see Fodor col. 3, line 10-16; so that it would benefit to develop and utilize a link capacity/bandwidth for optimization; see Fodor col. 2, line 48-50.

Neither Soumiya nor Fodor explicitly discloses "QoS factor specifies a maximum packet loss probability for said link, and the plurality of marginal packet loss probabilities based on QoS factor, the determining comprises selecting one of the one or more using the plurality of marginal packet loss probabilities".

However, utilizing QoS factor specifies a maximum packet loss probability for said link, and the plurality of marginal packet loss probabilities based on QoS factor, the determining comprises selecting one of the one or more using the plurality of marginal packet loss probabilities so well known in art as evident by Beshai. In particular, Beshai discloses QoS factor specifies a maximum packet loss probability for said link (see section II, section III B-C, IV, V, Appendix. II, QoS specifics/identifies the overall/aggregate/maximum cell loss probability), and the plurality of marginal packet loss probabilities based on QoS factor (see section II; section III B-C, IV, V, Appendix. II, marginal/original probability of packet lost is determined based on QoS), and the determining comprises selecting one of the one or more amounts of bandwidth using the plurality of state probabilities (see section III C, V, Appendix I, II, determining/selecting capacity/load using state probabilities according to Erlang Formula) and the plurality of marginal packet loss probabilities (see section II, section III B-C, IV, V,

Appendix. II; see section II, section III B-C, IV, V, Appendix. II, and marginal/original

probability of packet lost).

Therefore, it would have been obvious to one having ordinary skill in the art at the time

the invention was made to provide "QoS factor specifies a maximum packet loss probability for

said link, and the plurality of marginal packet loss probabilities based on QoS factor, the

determining comprises selecting one of the one or more using the plurality of marginal packet

loss probabilities" as taught by Beshai, in the combined system of Soumiya and Fodor, so that it

would provide low cost and high performance as suggested by Beshai; see Beshai section I.

Regarding Claim 44, Soumiya discloses determining bandwidth based when packet is

send through (see FIG. 18, 27, a cell is send through link/line; see col. 16, line 46-64; see col. 1,

line 50-66) that has a specified amount of bandwidth (see FIG. 2, a link/line has a bandwidth; see

col. 3667) and is being used by a specified number of users (see FIG. 18, 27, and utilize by a

number of users/subscribers, where each user/subscriber (see FIG. 18), using the link/line, is

associated with each call; see col. 7, line 11-16; see col. 7, line 50-60; see col. 9, line 21-40; see

col. 10, line 31-40).

Neither Soumiya nor Fodor explicitly disclose "based on a probability that a packet will

be lost".

However, determining bandwidth based upon a probability of packet lost is so well

known in the art. In particular, Beshai discloses determining based on a probability that a packet

will be lost when said packet is send through a link that: has a specific amount of bandwidth;

(see section II, section III B-C, IV, V, Appendix. II; determining link-capacity/bandwidth

according to marginal/original probability of cell lost probability for a cell that will be lost when

traverses over the link, and has a predefined recourses/capacity and used by users of the network).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "based on a probability that a packet will be lost" as taught by Beshai, in the combined system of Soumiya and Fodor, so that it would provide low cost and high performance as suggested by Beshai; see Beshai section I.

Regarding Claim 46, Soumiya discloses an apparatus for determining an amount of bandwidth needed on a link (see FIG. 1, 18, 27, ATM network system 3C-n processing for bandwidth calculating for a line/link 22, see col. 9, line 5-15; see col. 16, line 46-54; see col. 16, line 64-69), comprising:

a network interface (see FIG. 18, Line Interface 22n; see FIG. 27) that is coupled to a data network (see FIG. 27, connecting/coupling to ATM network 3) for receiving one or more packet flows therefrom (see col. 1, line 50 to col. 2, line 60; see col. 16, line 46-65; to receiving flows of cells);

a processor (see FIG. 18, a combined controlling system of controller 23 and admission controller 24); and one or more stored sequences of instructions (see FIG. 18, memory 25 stores the sequence of instructions/programs) which, when executed by the processor (see FIG. 18, processed/executed by a combined controlling system of controller 23 and admission controller 24), cause the processor to carry out the steps of (see FIG. 1, 18, causing the combined controlling system to process the methods/steps for ATM network system, also see FIG. 19-20; see col. 9, line 5-15; see col. 16, line 64-69):

receiving a quality of service (QoS) factor (see col. 10, line 30-60; obtaining/receiving QoS),

determining (see FIG. 1, determining/calculating by required bandwidth calculator 13), for each of one or more amounts of bandwidth, based on the QoS factor (see col. 10, line 30-60; calculating bandwidth according to QoS), wherein said determining is performed based on user behavior (see FIG. 1, according to difference of average cell rate Ra and peak cell rate Rp which is declared by the user (i.e. user behavior/activities/act relative to the line/connection) from the cell rate comparator 11) and traffic characteristics see FIG. 1, and traffic class from traffic class judging portion 12);

determining (see FIG. 1, determining/calculating by required bandwidth calculator 13), based on user behavior (see FIG. 1, according to difference of average cell rate Ra and peak cell rate Rp which is declared by the user (i.e. user behavior/activities/act relative to the line/connection) from the cell rate comparator 11) and traffic characteristics (see FIG. 1, and traffic class from traffic class judging portion 12), said amount (see FIG. 1, calculated/determined bandwidth); see col. 9, line 6-26; and

wherein the determining comprises selecting one of the one or more amounts of bandwidth (see FIG. 1, selecting/determining bandwidth; see col. 9, line 6-26); and

storing said amount in memory (see FIG. 1, storing calculated bandwidth in the estimated bandwidth storage portion 15; see col. 9, line 25-30; also see FIG. 18, storing bandwidth in memory 25; see col. 16, line 55-63).

Soumiya does not explicitly disclose "a grade of service (GoS) factor, wherein the GoS

factor specifies a maximum call blocking probability for said link and a plurality of state

probabilities based on the GoS factor, and using the plurality of state probabilities".

However, utilizing a grade of service (GoS) factor, wherein the GoS factor specifies a

maximum call blocking probability for said link and a plurality of state probabilities based on the

GoS factor, and using the plurality of state probabilities is so well known and established in the

art as indicated by well-known Erlang Formula and well-known Fluid-Flow analysis (as admitted

by the applicant in page 12 of specification), and also evidence by Fodor.

In particular, Fodor teaches receiving a grade of service (GoS) factor (see col. 3, line 10-

15; see col. 10, line 1-7; receiving/obtaining grade of service (GOS) factor/ parameter), wherein

the GoS factor specifies a maximum call blocking probability for said link (see col. 3, line 25-33;

see col. 10, line 8-38; GOS predetermines/specifies call blocking probability, B^{max}, for the

link/line) and determining, for each of one or more amounts of bandwidth, a plurality of state

probabilities based on the GoS factor (see col. 10, line 1-6, 33 to col. 11, line 9; see col. 13, line

5 to col. 15, line 67; system/steady state probability according to Erlang Formula while

meeting/satisfying GOS call blocking requirement);

determining comprises selection one of the one or more amounts of bandwidth using the

probability of state probabilities (see col. 3, line 10-15,34-45,60 to col. 4, line 2; col. 10, line 1-6,

33 to col. 11, line 9; see col. 13, line 5 to col. 15, line 67; selecting/determining bandwidth

according to system/steady state probability).

Therefore, it would have been obvious to one having ordinary skill in the art at the time

the invention was made to provide, "a grade of service (GoS) factor, wherein the GoS factor

specifies a maximum call blocking probability for said link and a plurality of state probabilities

based on the GoS factor, and using the plurality of state probabilities", as taught by Fodor in the

system of Soumiya, so that it would enable/ensure that the call GOS level is guaranteed for

traffic on the link; see Fodor col. 3, line 10-16; so that it would benefit to develop and utilize a

link capacity/bandwidth for optimization; see Fodor col. 2, line 48-50.

Neither Soumiya nor Fodor explicitly discloses "QoS factor specifies a maximum packet

loss probability for said link, and the plurality of marginal packet loss probabilities based on QoS

factor, the determining comprises selecting one of the one or more using the plurality of marginal

packet loss probabilities".

However, utilizing QoS factor specifies a maximum packet loss probability for said link,

and the plurality of marginal packet loss probabilities based on QoS factor, the determining

comprises selecting one of the one or more using the plurality of marginal packet loss

probabilities so well known in art as evident by Beshai. In particular, Beshai discloses QoS

factor specifies a maximum packet loss probability for said link (see section II, section III B-C,

IV, V, Appendix. II, QoS specifics/identifies the overall/aggregate/maximum cell loss

probability), and the plurality of marginal packet loss probabilities based on QoS factor (see

section II; section III B-C, IV, V, Appendix. II, marginal/original probability of packet lost is

determined based on QoS), and the determining comprises selecting one of the one or more

amounts of bandwidth using the plurality of state probabilities (see section III C, V, Appendix I,

II, determining/selecting capacity/load using state probabilities according to Erlang Formula) and

the plurality of marginal packet loss probabilities (see section II, section III B-C, IV, V,

Appendix. II; see section II; section III B-C, IV, V, Appendix. II, and marginal/original

probability of packet lost).

Therefore, it would have been obvious to one having ordinary skill in the art at the time

the invention was made to provide "QoS factor specifies a maximum packet loss probability for

said link, and the plurality of marginal packet loss probabilities based on QoS factor, the

determining comprises selecting one of the one or more using the plurality of marginal packet

loss probabilities" as taught by Beshai, in the combined system of Soumiya and Fodor, so that it

would provide low cost and high performance as suggested by Beshai; see Beshai section I.

Regarding Claim 57, Soumiya discloses determining bandwidth based when packet is

send through (see FIG. 18, 27, a cell is send through link/line; see col. 16, line 46-64; see col. 1,

line 50-66) that has a specified amount of bandwidth (see FIG. 2, a link/line has a bandwidth; see

col. 3667) and is being used by a specified number of users (see FIG. 18, 27, and utilize by a

number of users/subscribers, where each user/subscriber (see FIG. 18), using the link/line, is

associated with each call; see col. 7, line 11-16; see col. 7, line 50-60; see col. 9, line 21-40; see

col. 10, line 31-40).

Neither Soumiya nor Fodor explicitly disclose "based on a probability that a packet will

be lost".

However, determining bandwidth based upon a probability of packet lost is so well

known in the art. In particular, Beshai discloses determining based on a probability that a packet

will be lost when said packet is send through a link that: has a specific amount of bandwidth;

(see section II, section III B-C, IV, V, Appendix. II; determining link-capacity/bandwidth

according to marginal/original probability of cell lost probability for a cell that will be lost when

traverses over the link, and has a predefined recourses/capacity and used by users of the

network).

Therefore, it would have been obvious to one having ordinary skill in the art at the time

the invention was made to provide "based on a probability that a packet will be lost" as taught by

Beshai, in the combined system of Soumiya and Fodor, so that it would provide low cost and

high performance as suggested by Beshai; see Beshai section I.

6.   Claims 2, 21, 34 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Soumiya in view of Fodor and Beshai, and further in view of Kraushaar (US 4,200,771).

Regarding Claim 2, Soumiya discloses calls made by one or more users using said link

(see FIG. 18, calls/connection requests are made by users/subscribers using line 22n; see col. 16,

line 46-64).

Neither Soumiya, Fodor, nor Beshai explicitly disclose "an average time between arrivals

of calls".

However, measuring/determining an average time between arrivals of calls, which is well

known in the art as interarrival time, which is used to computes Erlang (i.e. call hours). In

particular, Kraushaar teaches an average time between arrivals of calls made by one or more

users using said link (see col. 1, line 60-45; see col. 2, line 60-67; average time between call

arrivals is called interval arrival, note that each call is associated with a user/subscriber using a

line/link/connection to computes Erlang for congestion control).

Therefore, it would have been obvious to one having ordinary skill in the art at the time

the invention was made to provide an average time between arrivals of calls or interarrival time,

as taught by Kraushaar in the combined system of Soumiya, Fodor and Beshai, so that it would

provide accurate measuring/determining of congestion and non-congestion periods; see

Kraushaar abstract; see col. 2, line 1-41; also by measuring/determining interarrival time, it

enables to computes Erlang to determine link/lines/trunk utilizations.

Regarding Claim 21, Soumiya discloses calls made by one or more users using said link

(see FIG. 18, calls/connection requests are made by users/subscribers using line 22n; see col. 16,

line 46-64).

Neither Soumiya, Fodor, nor Beshai explicitly disclose "an average time between arrivals

of calls".

However, measuring/determining an average time between arrivals of calls, which is well

known in the art as interarrival time, which is used to computes Erlang (i.e. call hours). In

particular, Kraushaar teaches an average time between arrivals of calls made by one or more

users using said link (see col. 1, line 60-45; see col. 2, line 60-67; average time between call

arrivals is called interval arrival, note that each call is associated with a user/subscriber using a

line/link/connection to computes Erlang for congestion control).

Therefore, it would have been obvious to one having ordinary skill in the art at the time

the invention was made to provide an average time between arrivals of calls or interarrival time,

as taught by Kraushaar in the combined system of Soumiya, Fodor and Beshai, so that it would

provide accurate measuring/determining of congestion and non-congestion periods; see

Kraushaar abstract; see col. 2, line 1-41; also by measuring/determining interarrival time, it

enables to computes Erlang to determine link/lines/trunk utilizations.

Regarding Claim 34, Soumiya discloses calls made by one or more users using said link (see FIG. 18, calls/connection requests are made by users/subscribers using line 22n; see col. 16, line 46-64).

Neither Soumiya, Fodor, nor Beshai explicitly disclose "an average time between arrivals of calls".

However, measuring/determining an average time between arrivals of calls, which is well known in the art as interarrival time, which is used to computes Erlang (i.e. call hours). In particular, Kraushaar teaches an average time between arrivals of calls made by one or more users using said link (see col. 1, line 60-45; see col. 2, line 60-67; average time between call arrivals is called interval arrival, note that each call is associated with a user/subscriber using a line/link/connection to computes Erlang for congestion control).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average time between arrivals of calls or interarrival time, as taught by Kraushaar in the combined system of Soumiya, Fodor and Beshai, so that it would provide accurate measuring/determining of congestion and non-congestion periods; see Kraushaar abstract; see col. 2, line 1-41; also by measuring/determining interarrival time, it enables to computes Erlang to determine link/lines/trunk utilizations.

Regarding Claim 47, Soumiya discloses calls made by one or more users using said link (see FIG. 18, calls/connection requests are made by users/subscribers using line 22n; see col. 16, line 46-64).

Neither Soumiya, Fodor, nor Beshai explicitly disclose "an average time between arrivals of calls".

However, measuring/determining an average time between arrivals of calls, which is well known in the art as interarrival time, which is used to computes Erlang (i.e. call hours). In particular, Kraushaar teaches an average time between arrivals of calls made by one or more users using said link (see col. 1, line 60-45; see col. 2, line 60-67; average time between call arrivals is called interval arrival, note that each call is associated with a user/subscriber using a line/link/connection to computes Erlang for congestion control).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average time between arrivals of calls or interarrival time, as taught by Kraushaar in the combined system of Soumiya, Fodor and Beshai so that it would provide accurate measuring/determining of congestion and non-congestion periods; see Kraushaar abstract; see col. 2, line 1-41; also by measuring/determining interarrival time, it enables to computes Erlang to determine link/lines/trunk utilizations.

7.   Claims 3, 22, 35 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soumiya in view of Fodor and Beshai, and further in view of Mashinksy (US 20050111647A1).

Regarding Claim 3, Soumiya discloses calls made by one or more users using said link (see FIG. 18, calls/connection requests are made by users/subscribers using line 22n; see col. 16, line 46-64).

Neither Soumiya, Fodor, nor Beshai explicitly disclose "an average duration of calls".

However, Mashinksy teaches determining an average duration of calls made by one or more users using said link (see FIG. 1, determining an average call length/duration made by

customers at calling locations 12 and 14 using the a link/line; see page 6, paragraph 65; see page 2, paragraph 27).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average duration of calls, as taught by Mashinksy in the combined system of Soumiya, Fodor and Beshai so that it would enable to determine least/better cost route/link and to determine better quality route/link for transmission; see Mashinksy see page 2, paragraph 12-13; see page 6, paragraph 65.

Regarding Claim 22, Soumiya discloses calls made by one or more users using said link (see FIG. 18, calls/connection requests are made by users/subscribers using line 22n; see col. 16, line 46-64).

Neither Soumiya, Fodor, nor Beshai explicitly disclose "an average duration of calls".

However, Mashinksy teaches determining an average duration of calls made by one or more users using said link (see FIG. 1, determining an average call length/duration made by customers at calling locations 12 and 14 using the a link/line; see page 6, paragraph 65; see page 2, paragraph 27).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average duration of calls, as taught by Mashinksy in the combined system of Soumiya, Fodor and Beshai, so that it would enable to determine least/better cost route/link and to determine better quality route/link for transmission; see Mashinksy see page 2, paragraph 12-13; see page 6, paragraph 65.

Regarding Claim 35, Soumiya discloses calls made by one or more users using said link (see FIG. 18, calls/connection requests are made by users/subscribers using line 22n; see col. 16, line 46-64).

Neither Soumiya, Fodor, nor Beshai explicitly disclose "an average duration of calls".

However, Mashinksy teaches determining an average duration of calls made by one or more users using said link (see FIG. 1, determining an average call length/duration made by customers at calling locations 12 and 14 using the a link/line; see page 6, paragraph 65; see page 2, paragraph 27).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average duration of calls, as taught by Mashinksy in the combined system of Soumiya, Fodor and Beshai so that it would enable to determine least/better cost route/link and to determine better quality route/link for transmission; see Mashinksy see page 2, paragraph 12-13; see page 6, paragraph 65.

Regarding Claim 48, Soumiya discloses calls made by one or more users using said link (see FIG. 18, calls/connection requests are made by users/subscribers using line 22n; see col. 16, line 46-64).

Neither Soumiya, Fodor, nor Beshai explicitly disclose "an average duration of calls".

However, Mashinksy teaches determining an average duration of calls made by one or more users using said link (see FIG. 1, determining an average call length/duration made by customers at calling locations 12 and 14 using the a link/line; see page 6, paragraph 65; see page 2, paragraph 27).

Therefore, it would have been obvious to one having ordinary skill in the art at the time

the invention was made to provide an average duration of calls, as taught by Mashinksy in the

combined system of Soumiya, Fodor and Beshai so that it would enable to determine least/better

cost route/link and to determine better quality route/link for transmission; see Mashinksy see

page 2, paragraph 12-13; see page 6, paragraph 65.

8.   Claims 4, 23, 36 and 49 and are rejected under 35 U.S.C. 103(a) as being unpatentable

over Soumiya in view of Fodor and Beshai, and further in view of VanDervort (US 5,699,346).

Regarding Claim 4, Soumiya discloses arrivals of packets on said link (see FIG. 18,

cells are arriving on the line 22n; see col. 16, line 46-64).

Neither Soumiya, Fodor, nor Beshai explicitly disclose "an average time between arrivals

of packets".

However, VanDervort teaches determining an average time between arrivals of packets

on said link (see col. 13, line 35-45; see col. 14, line 50-65; see col. 17, line 15-21; measuring by

averaging intercell arrival time between arrival of cells during a connection/link).

Therefore, it would have been obvious to one having ordinary skill in the art at the time

the invention was made to provide an average time between arrivals of packets, as taught by

VanDervort in the combined system of Soumiya, Fodor and Beshai so that it would measure and

ensure the conformity to service agreement; see VanDervort col. 5, line 25-45.

Regarding Claim 23, Soumiya discloses arrivals of packets on said link (see FIG. 18,

cells are arriving on the line 22n; see col. 16, line 46-64).

Neither Soumiya, Fodor, nor Beshai explicitly disclose "an average time between arrivals of packets".

However, VanDervort teaches determining an average time between arrivals of packets on said link (see col. 13, line 35-45; see col. 14, line 50-65; see col. 17, line 15-21; measuring by averaging intercell arrival time between arrival of cells during a connection/link).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average time between arrivals of packets, as taught by VanDervort in the combined system of Soumiya, Fodor and Beshai so that it would measure and ensure the conformity to service agreement; see VanDervort col. 5, line 25-45.

Regarding Claim 36, Soumiya discloses arrivals of packets on said link (see FIG. 18, cells are arriving on the line 22n; see col. 16, line 46-64).

Neither Soumiya, Fodor, nor Beshai explicitly disclose "an average time between arrivals of packets".

However, VanDervort teaches determining an average time between arrivals of packets on said link (see col. 13, line 35-45; see col. 14, line 50-65; see col. 17, line 15-21; measuring by averaging intercell arrival time between arrival of cells during a connection/link).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average time between arrivals of packets, as taught by VanDervort in the combined system of Soumiya, Fodor and Beshai so that it would measure and ensure the conformity to service agreement; see VanDervort col. 5, line 25-45.

Regarding Claim 49, Soumiya discloses arrivals of packets on said link (see FIG. 18, cells are arriving on the line 22n; see col. 16, line 46-64).

Neither Soumiya, Fodor, nor Beshai explicitly disclose "an average time between arrivals of packets".

However, VanDervort teaches determining an average time between arrivals of packets on said link (see col. 13, line 35-45; see col. 14, line 50-65; see col. 17, line 15-21; measuring by averaging intercell arrival time between arrival of cells during a connection/link).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average time between arrivals of packets, as taught by VanDervort in the combined system of Soumiya, Fodor and Beshai so that it would measure and ensure the conformity to service agreement; see VanDervort col. 5, line 25-45.

9.   Claims 5, 24, 37 and 50 and are rejected under 35 U.S.C. 103(a) as being unpatentable over Soumiya in view of Fodor, Beshai and further in view of Depelteau (US006118764A).

Regarding Claim 5, Soumiya discloses packets are transmitted relatively continuously on said link (see FIG. 18, cells are transmitted continuously on the line 22n; see col. 16, line 46-64).

Neither Soumiya, Fodor, nor Beshai explicitly disclose "an average duration period during which packets are transmitted".

However, Depelteau teaches determining an average duration period which packets are transmitted relatively continuously on said link (see col. 5, line 54-60; see col. 6, line 39-67; see col. 7, line 30-34; determining average cell interdeparture time which cells are transmitted continuously over a connection/link).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average duration period during which packets are transmitted, as taught by Depelteau in the combined system of Soumiya, Fodor and Beshai so that it would provide controlling the flow of ATM cells; see Depelteau col. 2, line 5-15.

Regarding Claim 24, Soumiya discloses packets are transmitted relatively continuously on said link (see FIG. 18, cells are transmitted continuously on the line 22n; see col. 16, line 46-64).

Neither Soumiya, Fodor, nor Beshai explicitly disclose "an average duration period during which packets are transmitted".

However, Depelteau teaches determining an average duration period which packets are transmitted relatively continuously on said link (see col. 5, line 54-60; see col. 6, line 39-67; see col. 7, line 30-34; determining average cell interdeparture time which cells are transmitted continuously over a connection/link).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average duration period during which packets are transmitted, as taught by Depelteau in the combined system of Soumiya, Fodor and Beshai so that it would provide controlling the flow of ATM cells; see Depelteau col. 2, line 5-15.

Regarding Claim 37, Soumiya discloses packets are transmitted relatively continuously on said link (see FIG. 18, cells are transmitted continuously on the line 22n; see col. 16, line 46-64).

Neither Soumiya, Fodor, nor Beshai explicitly disclose "an average duration period during which packets are transmitted".

However, Depelteau teaches determining an average duration period which packets are transmitted relatively continuously on said link (see col. 5, line 54-60; see col. 6, line 39-67; see col. 7, line 30-34; determining average cell interdeparture time which cells are transmitted continuously over a connection/link).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average duration period during which packets are transmitted, as taught by Depelteau in the combined system of Soumiya, Fodor and Beshai so that it would provide controlling the flow of ATM cells; see Depelteau col. 2, line 5-15.

Regarding Claim 50, Soumiya discloses packets are transmitted relatively continuously on said link (see FIG. 18, cells are transmitted continuously on the line 22n; see col. 16, line 46-64).

Neither Soumiya, Fodor, nor Beshai explicitly disclose "an average duration period during which packets are transmitted".

However, Depelteau teaches determining an average duration period which packets are transmitted relatively continuously on said link (see col. 5, line 54-60; see col. 6, line 39-67; see col. 7, line 30-34; determining average cell interdeparture time which cells are transmitted continuously over a connection/link).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average duration period during which packets are transmitted, as taught by Depelteau in the combined system of Soumiya, Fodor and Beshai so that it would provide controlling the flow of ATM cells; see Depelteau col. 2, line 5-15.

10.   Claims 6, 25, 38 and 51 and are rejected under 35 U.S.C. 103(a) as being unpatentable over Soumiya in view of Fodor and Beshai, and further in view of Takeuchi (US 20040062256A1).

Regarding Claim 6, Soumiya discloses determining bandwidth as set forth above in claim 1.

Neither Soumiya, Fodor, nor Beshai explicitly disclose "based on a specific number of users".

However, Takeuchi teaches determining bandwidth amount is based on a specified number of users (see page 2, paragraph 32-33; see page 3, paragraph 48; see page 4, paragraph 50; allocating bandwidth according to the number of users).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide allocation bandwidth base on a specific number of users, as taught by Takeuchi in the combined system of Soumiya, Fodor and Beshai so that it would provide bandwidth control on user basis; see Takeuchi col. 2, line 5-15.

Regarding Claim 25, Soumiya discloses determining bandwidth as set forth above in claim 20.

Neither Soumiya, Fodor, nor Beshai explicitly disclose "based on a specific number of users".

However, Takeuchi teaches determining bandwidth amount is based on a specified number of users (see page 2, paragraph 32-33; see page 3, paragraph 48; see page 4, paragraph 50; allocating bandwidth according to the number of users).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide allocation bandwidth base on a specific number of users, as taught by Takeuchi in the combined system of Soumiya, Fodor and Beshai so that it would provide bandwidth control on user basis; see Takeuchi col. 2, line 5-15.

Regarding Claim 38, Soumiya discloses determining bandwidth as set forth above in claim 33.

Neither Soumiya, Fodor, nor Beshai explicitly disclose "based on a specific number of users".

However, Takeuchi teaches determining bandwidth amount is based on a specified number of users (see page 2, paragraph 32-33; see page 3, paragraph 48; see page 4, paragraph 50; allocating bandwidth according to the number of users).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide allocation bandwidth base on a specific number of users, as taught by Takeuchi in the combined system of Soumiya, Fodor and Beshai so that it would provide bandwidth control on user basis; see Takeuchi col. 2, line 5-15.

Regarding Claim 51, Soumiya discloses determining bandwidth as set forth above in claim 46.

Neither Soumiya, Fodor, nor Beshai explicitly disclose "based on a specific number of users".

However, Takeuchi teaches determining bandwidth amount is based on a specified number of users (see page 2, paragraph 32-33; see page 3, paragraph 48; see page 4, paragraph 50; allocating bandwidth according to the number of users).

Therefore, it would have been obvious to one having ordinary skill in the art at the time

the invention was made to provide allocation bandwidth base on a specific number of users, as

taught by Takeuchi in the combined system of Soumiya, Fodor and Beshai so that it would

provide bandwidth control on user basis; see Takeuchi col. 2, line 5-15.

11.   Claims 11, 30, 43 and 56 and are rejected under 35 U.S.C. 103(a) as being unpatentable

over Soumiya in view of Fodor and Beshai, and further in view of Ishikawa (US005838671A).

Regarding Claim 11, Soumiya discloses determining bandwidth relative to said link as

set forth above in claim 1. Fodor discloses based on a probability when a specified maximum

call blocking required is satisfied (see col. 3, line 10-15,34-45,60 to col. 4, line 2; col. 10, line 1-

6, 33 to col. 11, line 9; see col. 13, line 5 to col. 15, line 67; selecting/determining bandwidth

based on the system/steady state probability per to Erlang Formula while meeting/satisfying

GOS call blocking requirement).

Neither Soumiya, Fodor, nor Beshai explicitly disclose "based on a specified number of

users are using said link".

However, Ishikawa teaches said amount is based on a probability that a specified number

of users are using said link when a specified maximum call blocking required is satisfied relative

to said link (see FIG. 6, capacity/bandwidth is determined according to the probability of number

connectable users within quality when maintaining/satisfying maximum blocking probability

1%; see col. 9, line 5-20; see col. 12, line 10-50; see col. 16, line 63 to col. 17, line 11).

Therefore, it would have been obvious to one having ordinary skill in the art at the time

the invention was made to provide based on a specified number of users are using said link", as

taught by Ishikawa in the combined system of Soumiya, Fodor and Beshai so that it would

provide call admission control flexibly deal with a traffic variation and stratify a given blocking

probability while guaranteeing the quality; see Ishikawa col. 2, line 45-56.

Regarding Claim 30, Soumiya discloses determining bandwidth relative to said link as

set forth above in claim 20. Fodor discloses based on a probability when a specified maximum

call blocking required is satisfied (see col. 3, line 10-15,34-45,60 to col. 4, line 2; col. 10, line 1-

6, 33 to col. 11, line 9; see col. 13, line 5 to col. 15, line 67; selecting/determining bandwidth

based on the system/steady state probability per to Erlang Formula while meeting/satisfying

GOS call blocking requirement).

Neither Soumiya, Fodor, nor Beshai explicitly disclose "based on a specified number of

users are using said link".

However, Ishikawa teaches said amount is based on a probability that a specified number

of users are using said link when a specified maximum call blocking required is satisfied relative

to said link (see FIG. 6, capacity/bandwidth is determined according to the probability of number

connectable users within quality when maintaining/satisfying maximum blocking probability

1%; see col. 9, line 5-20; see col. 12, line 10-50; see col. 16, line 63 to col. 17, line 11).

Therefore, it would have been obvious to one having ordinary skill in the art at the time

the invention was made to provide based on a specified number of users are using said link", as

taught by Ishikawa in the combined system of Soumiya, Fodor and Beshai so that it would

provide call admission control flexibly deal with a traffic variation and stratify a given blocking

probability while guaranteeing the quality; see Ishikawa col. 2, line 45-56.

Regarding Claim 43, Soumiya discloses determining bandwidth relative to said link as set forth above in claim 33.

Fodor discloses based on a probability when a specified maximum call blocking required is satisfied (see col. 3, line 10-15,34-45,60 to col. 4, line 2; col. 10, line 1-6, 33 to col. 11, line 9; see col. 13, line 5 to col. 15, line 67; selecting/determining bandwidth based on the system/steady state probability per to Erlang Formula while meeting/satisfying GOS call blocking requirement).

Neither Soumiya, Fodor, nor Beshai explicitly disclose "based on a specified number of users are using said link".

However, Ishikawa teaches said amount is based on a probability that a specified number of users are using said link when a specified maximum call blocking required is satisfied relative to said link (see FIG. 6, capacity/bandwidth is determined according to the probability of number connectable users within quality when maintaining/satisfying maximum blocking probability 1%; see col. 9, line 5-20; see col. 12, line 10-50; see col. 16, line 63 to col. 17, line 11).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide based on a specified number of users are using said link", as taught by Ishikawa in the combined system of Soumiya, Fodor and Beshai so that it would provide call admission control flexibly deal with a traffic variation and stratify a given blocking probability while guaranteeing the quality; see Ishikawa col. 2, line 45-56.

Regarding Claim 56, Soumiya discloses determining bandwidth relative to said link as set forth above in claim 46.

Fodor discloses based on a probability when a specified maximum call blocking required is satisfied (see col. 3, line 10-15,34-45,60 to col. 4, line 2; col. 10, line 1-6, 33 to col. 11, line 9; see col. 13, line 5 to col. 15, line 67; selecting/determining bandwidth based on the system/steady state probability per to Erlang Formula while meeting/satisfying GOS call blocking requirement).

Neither Soumiya, Fodor, nor Beshai explicitly disclose "based on a specified number of users are using said link".

However, Ishikawa teaches said amount is based on a probability that a specified number of users are using said link when a specified maximum call blocking required is satisfied relative to said link (see FIG. 6, capacity/bandwidth is determined according to the probability of number connectable users within quality when maintaining/satisfying maximum blocking probability 1%; see col. 9, line 5-20; see col. 12, line 10-50; see col. 16, line 63 to col. 17, line 11). ·

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide based on a specified number of users are using said link", as taught by Ishikawa in the combined system of Soumiya, Fodor and Beshai so that it would provide call admission control flexibly deal with a traffic variation and stratify a given blocking probability while guaranteeing the quality; see Ishikawa col. 2, line 45-56.

Response to Arguments

12.   Applicant's arguments with respect to claims 1-6, 11-13, 20-25, 30-38, 43-51, 56-58 have been considered but are moot in view of the new ground(s) of rejection.

Regarding claims 1-6, 11-13, 20-25, 30-38, 43-51, 56-58, the applicant argued that,

"...Soumiya does not perform any determination of an amount of bandwidth needed on such a

transmission line...There is no disclosure in Fodor that an amount of bandwidth needed on a link

is determined relating to a GOS factor...Fodor also failed to disclose...using in the plurality of

state probabilities..." in page 11-12.

In response to applicant's argument, the examiner respectfully disagrees with the

argument above since the combined system of Soumiya and Fodor discloses the claimed

invention as set forth below.

Soumiya discloses a method of determining an amount of bandwidth needed on a link

(see FIG. 1, 18, ATM network system processing the methods/steps of bandwidth calculating for

a line/link 22, also see FIG. 19-20; see col. 9, line 5-15; see col. 16, line 46-54; see col. 16, line

64-69), the method comprising: receiving a quality of service (QoS) factor (see col. 10, line 30-

60; obtaining/receiving QoS), determining (see FIG. 1, determining/calculating by required

bandwidth calculator 13), for each of one or more amounts of bandwidth, based on the QoS

factor (see col. 10, line 30-60; calculating bandwidth according to QoS), wherein said

determining is performed based on user behavior (see FIG. 1, according to difference of average

cell rate Ra and peak cell rate Rp which is declared by the user (i.e. user behavior/activities/act

relative to the line/connection) from the cell rate comparator 11) and traffic characteristics see

FIG. 1, and traffic class from traffic class judging portion 12).

Fodor teaches receiving a grade of service (GoS) factor (see col. 3, line 10-15; see col.

10, line 1-7; receiving/obtaining grade of service (GOS) factor/ parameter), wherein the GoS

factor specifies a maximum call blocking probability for said link (see col. 3, line 25-33; see col.

10, line 8-38; GOS predetermines/specifies call blocking probability, B^{max}, for the link/line) and

determining, for each of one or more amounts of bandwidth, a plurality of state probabilities

based on the GoS factor (see col. 10, line 1-6, 33 to col. 11, line 9; see col. 13, line 5 to col. 15,

line 67; system/steady state probability according to Erlang Formula while meeting/satisfying

GOS call blocking requirement); determining comprises selection one of the one or more

amounts of bandwidth using the probability of state probabilities (see col. 3, line 10-15, 34-45,

60 to col. 4, line 2; col. 10, line 1-6, 33 to col. 11, line 9; see col. 13, line 5 to col. 15, line 67;

selecting/determining bandwidth according to system/steady state probability).

In response to applicant's argument, the test for obviousness is not whether the

features of a secondary reference may be bodily incorporated into the structure of the primary

reference; nor is it that the claimed invention must be expressly suggested in any one or all of the

references. Rather, the test is what the combined teachings of the references would have

suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871

(CCPA 1981).

In response to applicant's arguments against the references individually, one cannot

show nonobviousness by attacking references individually where the rejections are based on

combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re*

Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

13.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N. Moore whose telephone number is 571-272-3085. The examiner can normally be reached on 9:00 AM- 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 571-272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ian N. Moore
Examiner
Art Unit 2616

11-26-07

DORIS H. TO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600